FIG.1

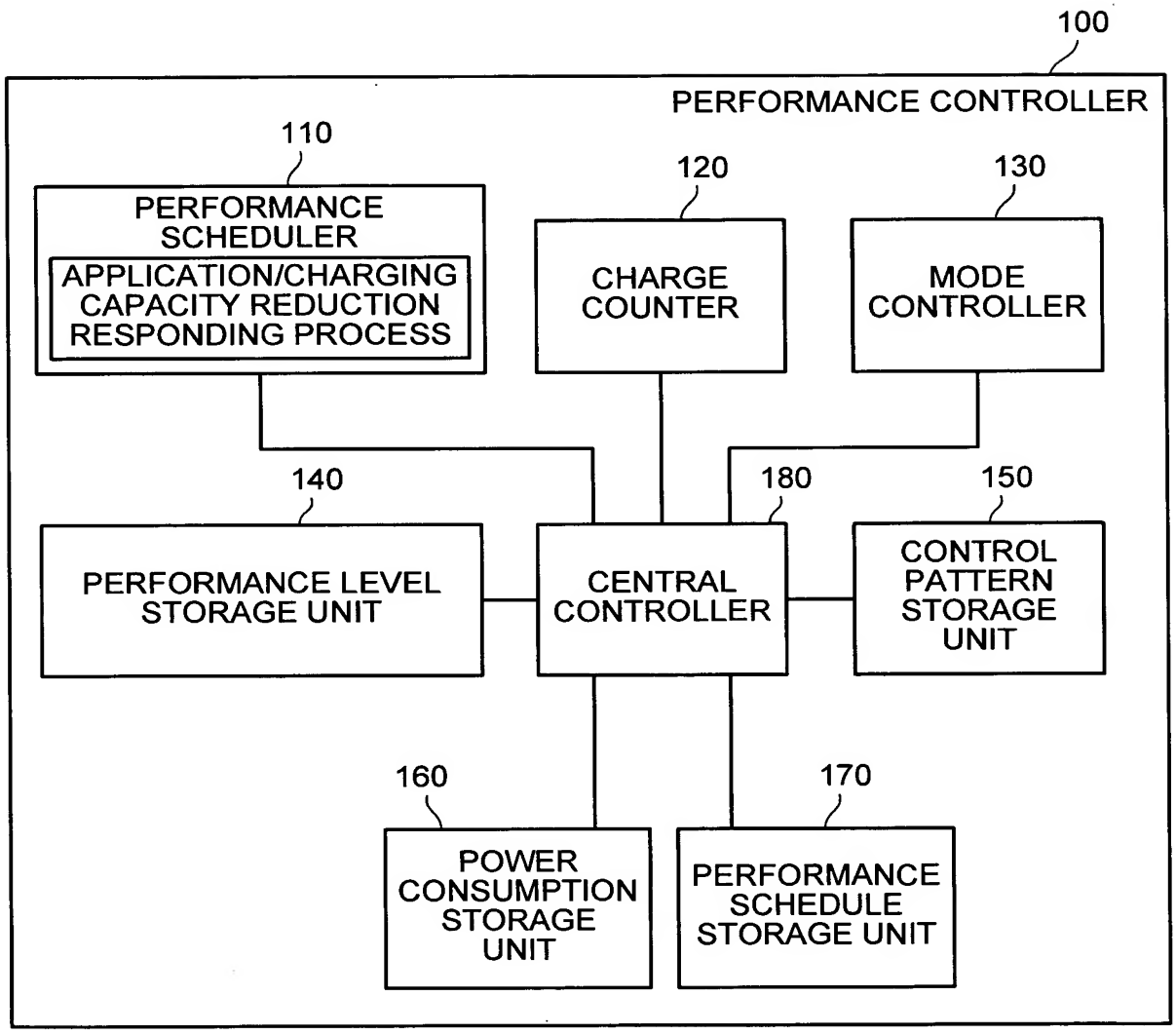

100
PERFORMANCE CONTROLLER
110
PERFORMANCE SCHEDULER
APPLICATION/CHARGING CAPACITY REDUCTION RESPONDING PROCESS
120
CHARGE COUNTER
130
MODE CONTROLLER
140
PERFORMANCE LEVEL STORAGE UNIT
180
CENTRAL CONTROLLER
150
CONTROL PATTERN STORAGE UNIT
160
POWER CONSUMPTION STORAGE UNIT
170
PERFORMANCE SCHEDULE STORAGE UNIT

FIG.2

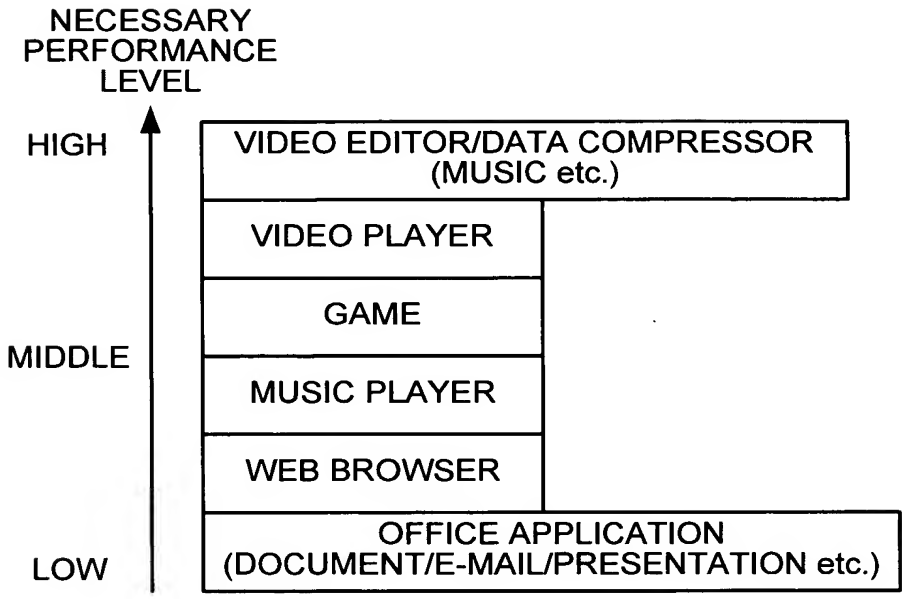

NECESSARY PERFORMANCE LEVEL
HIGH
MIDDLE
LOW
VIDEO EDITOR/DATA COMPRESSOR (MUSIC etc.)
VIDEO PLAYER
GAME
MUSIC PLAYER
WEB BROWSER
OFFICE APPLICATION (DOCUMENT/E-MAIL/PRESENTATION etc.)

FIG.3

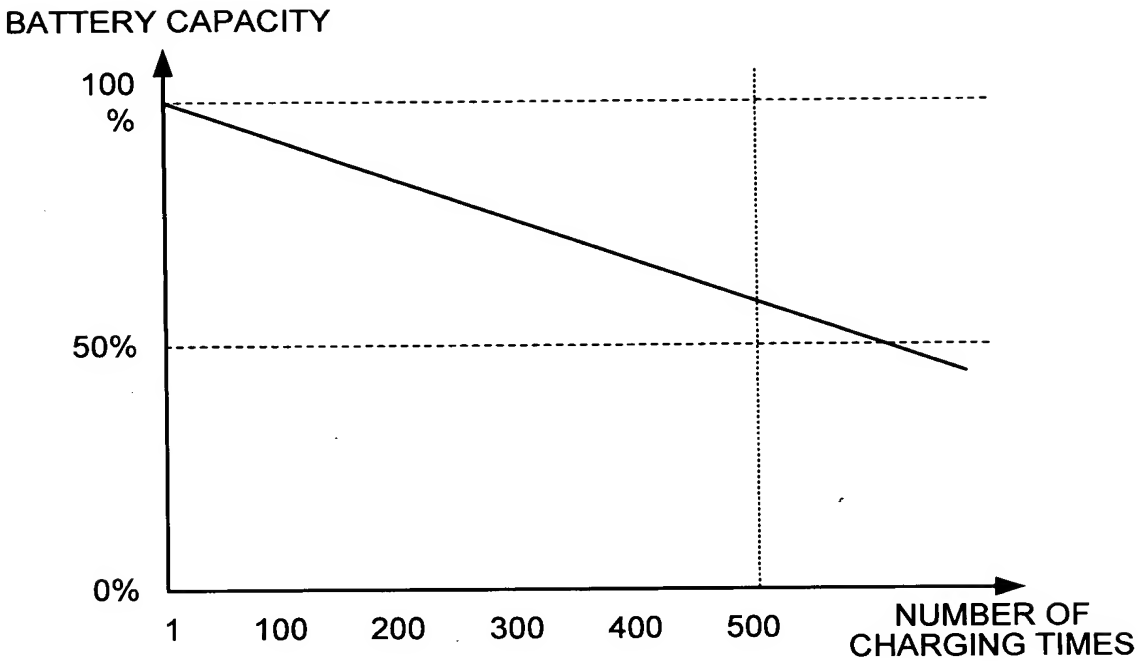

BATTERY CAPACITY
100
%
50%
0%
1
100
200
300
400
500
NUMBER OF
CHARGING TIMES

FIG.4

| APPLICATION CATEGORIES | PERFORMANCE LEVEL | POWER CONSUMPTION (WATT) | EXAMPLE |
|---|---|---|---|
| VIDEO EDITOR/ DATA COMPRESSOR (MUSIC etc.) | 12 | 56 | MP3 DV VIDEO EDITOR FILE COMPRESSOR |
| | 11 | 51.5 | |
| | 10 | 47.6 | |
| VIDEO PLAYER | 10 | 47.6 | DVD PLAYER |
| | 9 | 46.5 | |
| | 8 | 41 | |
| GAME | ... | ... | 3D ACTION GAME |
| | ... | ... | |
| | ... | ... | |
| MUSIC PLAYER | ... | ... | MP3 PLAYER CD PLAYER |
| | ... | ... | |
| | ... | ... | |
| WEB BROWSER | ... | ... | WEB BROWSER WEB SEARCHER |
| | ... | ... | |
| OFFICE APPLICATION (DOCUMENT/E-MAIL/ PRESENTATION etc.) | 1 | 6.1 | WORD PROCESSOR PRESENTATION SOFT MAILER |

FIG.5

| COMPONENT \ PERFORMANCE LEVEL | 12 | ... | 2 | 1 |
|---|---|---|---|---|
| LCD | 3 | | 1 | 1 |
| CPU | 3 | | 2 | 1 |
| HDD | 3 | | 1 | 1 |
| AUDIO | 3 | | 2 | 1 |
| MEMORY | 3 | | 1 | 1 |
| GRAPHIC | 3 | ... | 2 | 1 |
| MODEM | 1 | | 1 | 1 |
| LAN | 1 | | 1 | 1 |
| OPTICAL DRIVE | 3 | | 1 | 1 |
| OTHER | 2 | | 1 | 1 |
| POWER CONSUMPTION (WATT) | 56 | | 23 | 6.1 |

FIG.6

| COMPONENT | CONSUMPTION LEVEL | POWER CONSUMPTION (WATT) |
|---|---|---|
| LCD | 3 | 5 |
| | 2 | 3 |
| | 1 | 1 |
| CPU | 3 | 30 |
| | 2 | 15 |
| | 1 | 1 |
| HDD | 3 | 5 |
| | 2 | 3 |
| | 1 | 1 |
| AUDIO | 3 | 1 |
| | 2 | 0.5 |
| | 1 | 0 |
| MEMORY | 3 | 1 |
| | 2 | 0.5 |
| | 1 | 0.1 |
| GRAPHIC | 3 | 5 |
| | 2 | 3 |
| | 1 | 1 |
| MODEM | 3 | 0.5 |
| | 2 | 0.1 |
| | 1 | 0 |
| LAN | 3 | 0.5 |
| | 2 | 0.1 |
| | 1 | 0 |
| OPTICAL DRIVE | 3 | 3 |
| | 2 | 2 |
| | 1 | 1 |
| OTHERS | 3 | 5 |
| | 2 | 3 |
| | 1 | 1 |

FIG.7

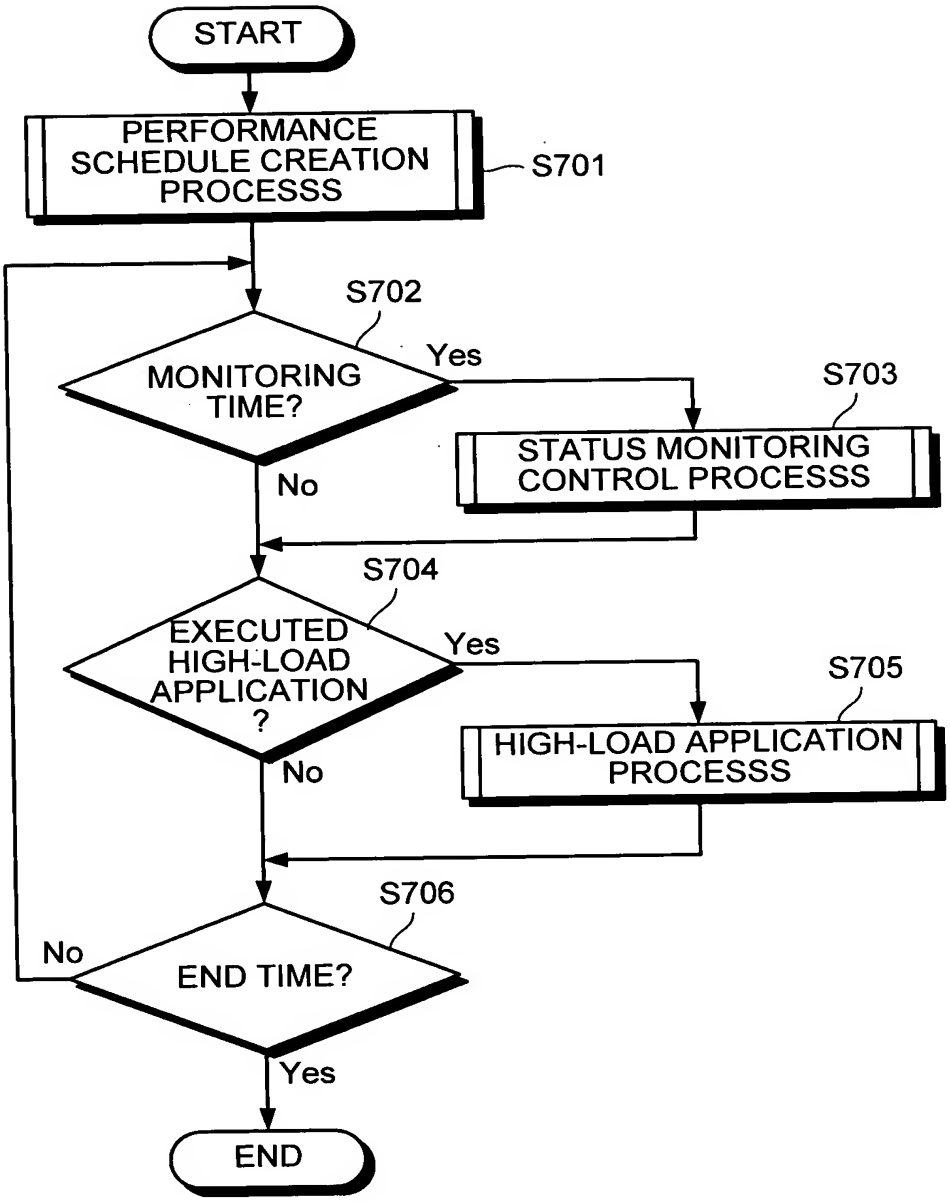

START
PERFORMANCE SCHEDULE CREATION PROCESSS
S701
S702
MONITORING TIME?
Yes
No
S703
STATUS MONITORING CONTROL PROCESSS
S704
EXECUTED HIGH-LOAD APPLICATION ?
Yes
No
S705
HIGH-LOAD APPLICATION PROCESSS
S706
END TIME?
No
Yes
END

FIG.8

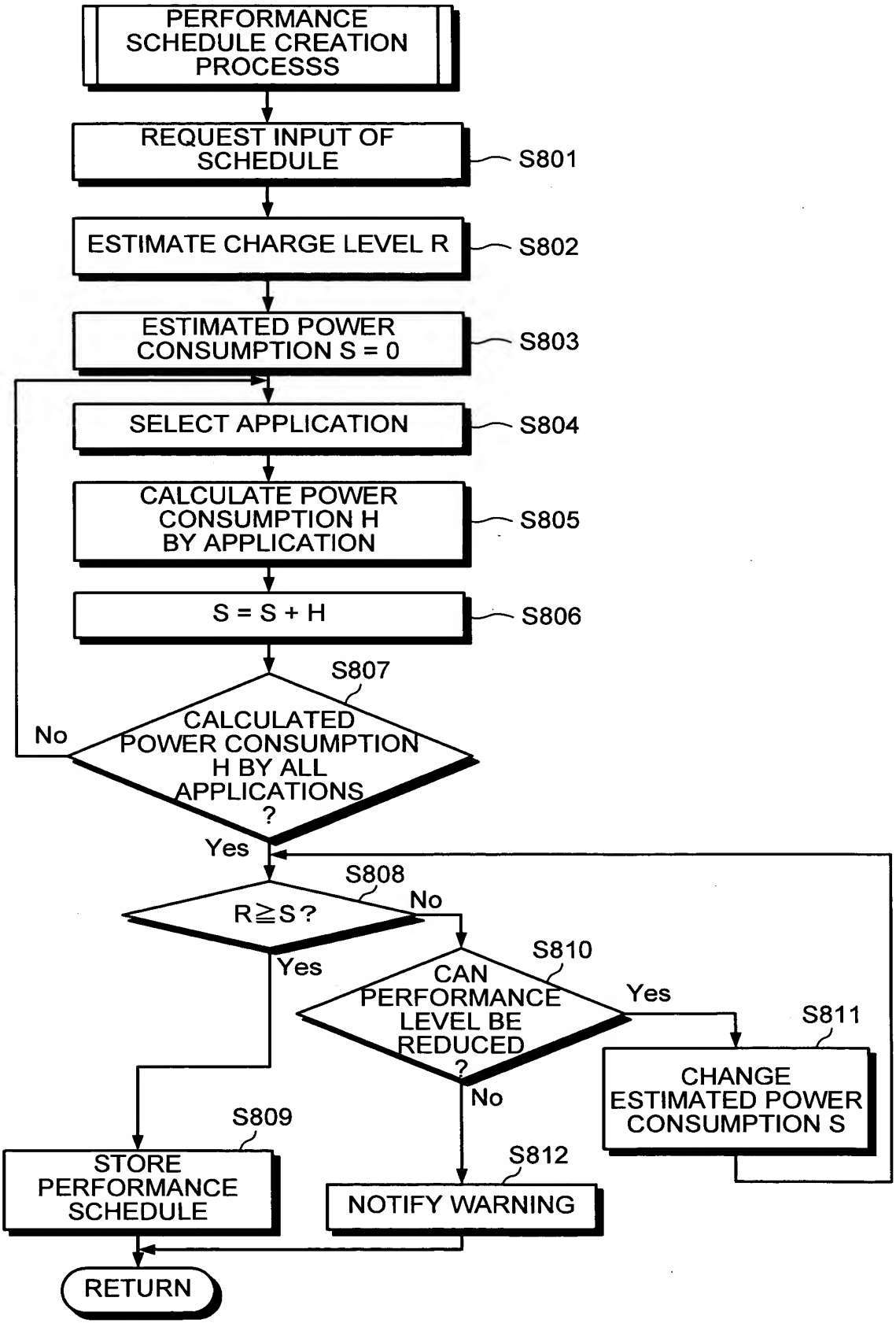

PERFORMANCE SCHEDULE CREATION PROCESSS
REQUEST INPUT OF SCHEDULE
S801
ESTIMATE CHARGE LEVEL R
S802
ESTIMATED POWER CONSUMPTION S = 0
S803
SELECT APPLICATION
S804
CALCULATE POWER CONSUMPTION H BY APPLICATION
S805
S = S + H
S806
S807
CALCULATED POWER CONSUMPTION H BY ALL APPLICATIONS ?
No
Yes
S808
R≧S?
No
Yes
S810
CAN PERFORMANCE LEVEL BE REDUCED ?
Yes
No
S811
CHANGE ESTIMATED POWER CONSUMPTION S
S809
STORE PERFORMANCE SCHEDULE
S812
NOTIFY WARNING
RETURN

FIG.9

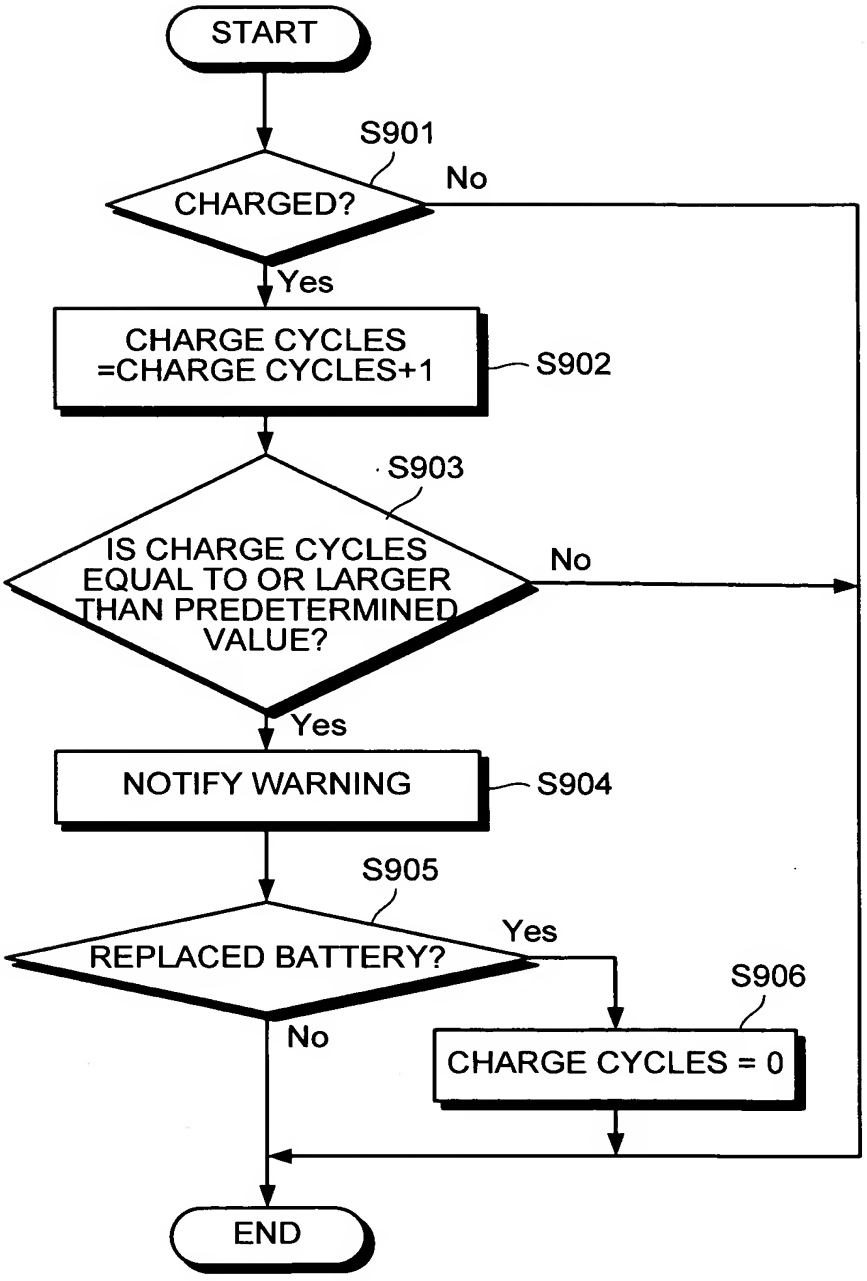

START
S901
CHARGED?
No
Yes
CHARGE CYCLES =CHARGE CYCLES+1
S902
S903
IS CHARGE CYCLES EQUAL TO OR LARGER THAN PREDETERMINED VALUE?
No
Yes
NOTIFY WARNING
S904
S905
REPLACED BATTERY?
Yes
No
S906
CHARGE CYCLES = 0
END

FIG.10

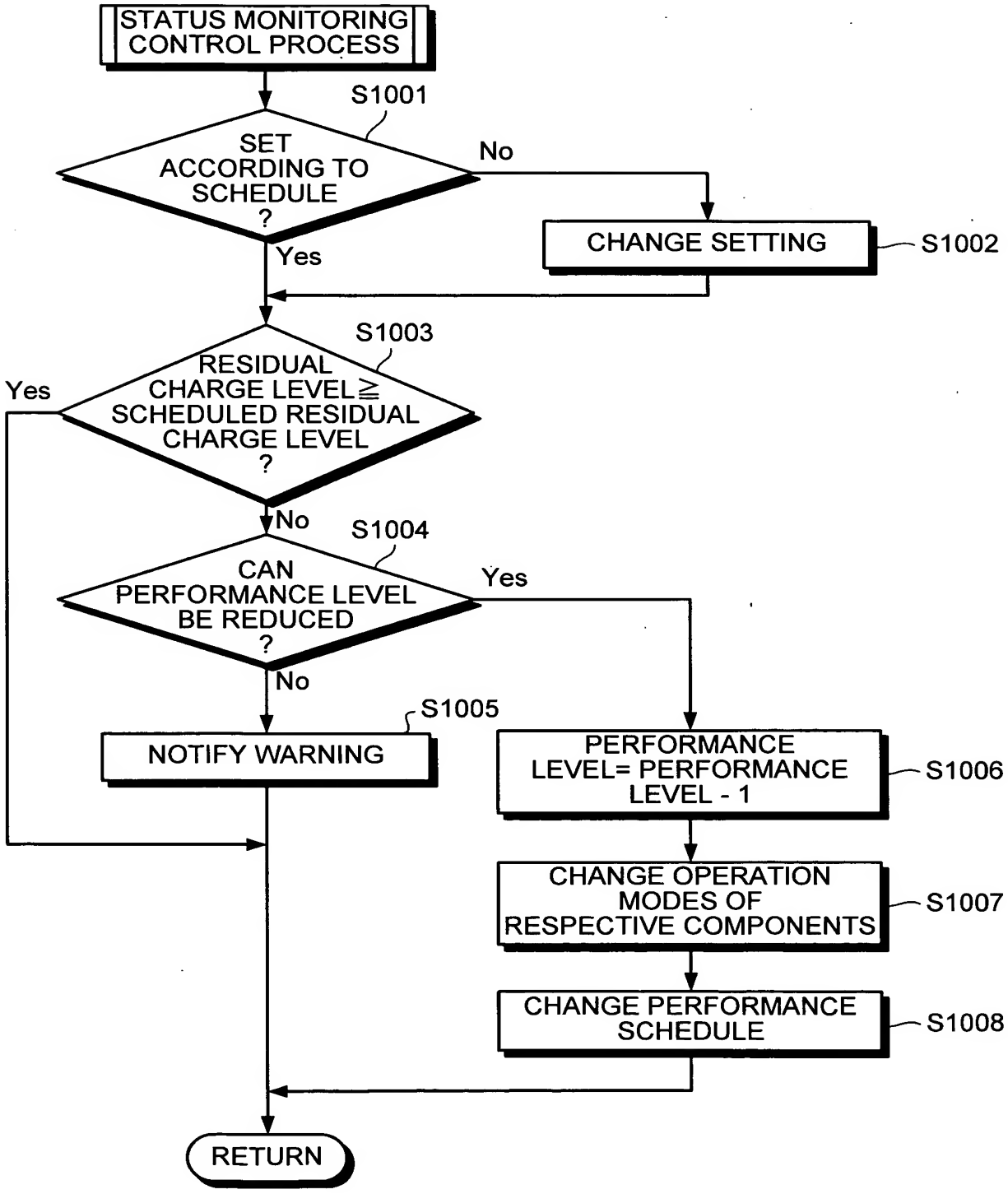

STATUS MONITORING CONTROL PROCESS
S1001
SET ACCORDING TO SCHEDULE ?
No
Yes
CHANGE SETTING
S1002
S1003
RESIDUAL CHARGE LEVEL≧ SCHEDULED RESIDUAL CHARGE LEVEL ?
Yes
No
S1004
CAN PERFORMANCE LEVEL BE REDUCED ?
Yes
No
S1005
NOTIFY WARNING
PERFORMANCE LEVEL= PERFORMANCE LEVEL - 1
S1006
CHANGE OPERATION MODES OF RESPECTIVE COMPONENTS
S1007
CHANGE PERFORMANCE SCHEDULE
S1008
RETURN

FIG.11

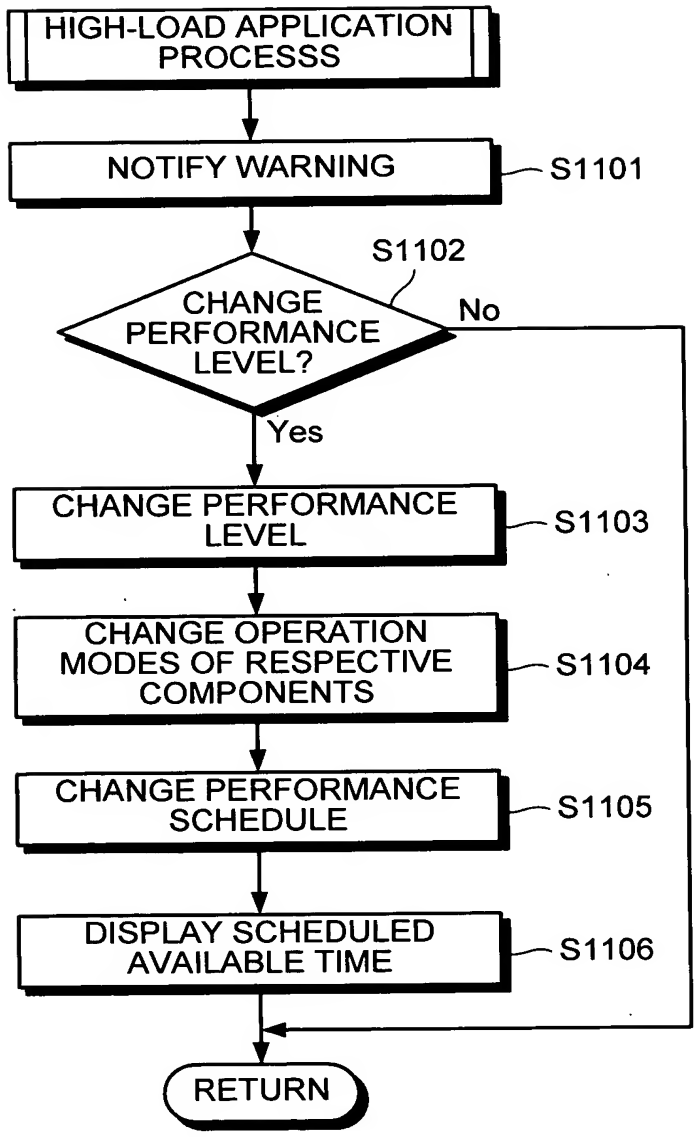
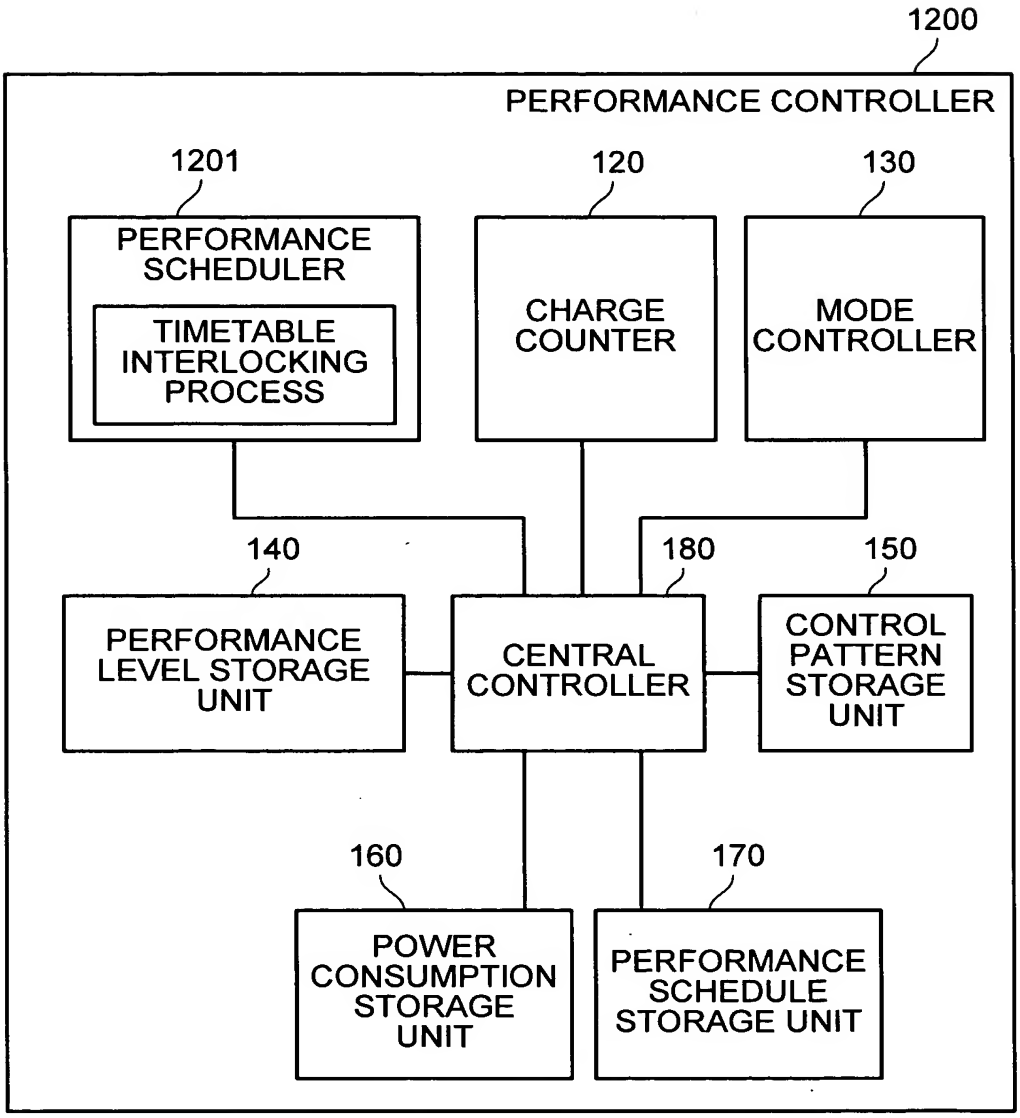

HIGH-LOAD APPLICATION PROCESSS
NOTIFY WARNING
S1101
S1102
CHANGE PERFORMANCE LEVEL?
No
Yes
CHANGE PERFORMANCE LEVEL
S1103
CHANGE OPERATION MODES OF RESPECTIVE COMPONENTS
S1104
CHANGE PERFORMANCE SCHEDULE
S1105
DISPLAY SCHEDULED AVAILABLE TIME
S1106
RETURN

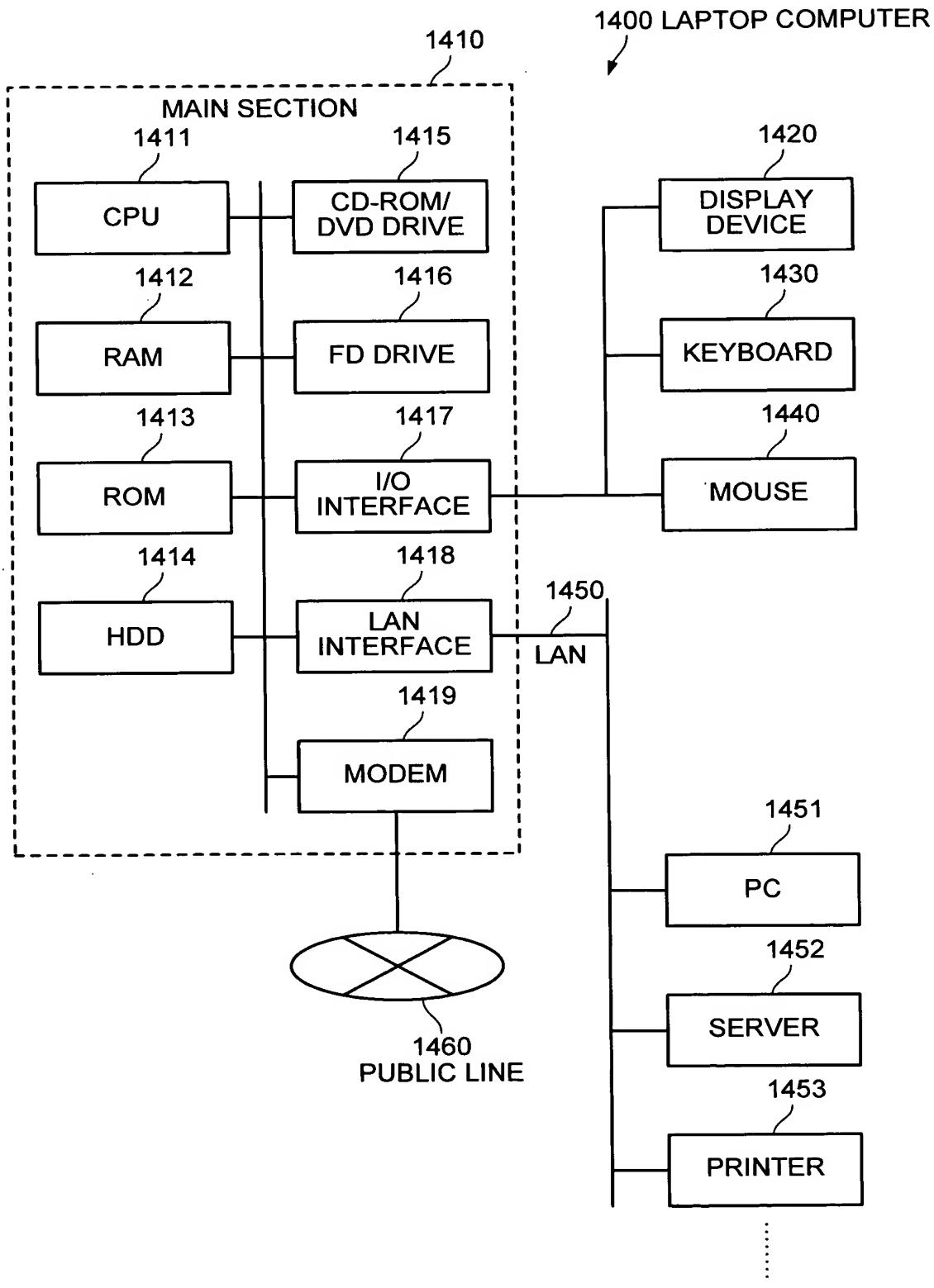
FIG.12


1200
PERFORMANCE CONTROLLER
1201
PERFORMANCE SCHEDULER
TIMETABLE INTERLOCKING PROCESS
120
CHARGE COUNTER
130
MODE CONTROLLER
140
PERFORMANCE LEVEL STORAGE UNIT
180
CENTRAL CONTROLLER
150
CONTROL PATTERN STORAGE UNIT
160
POWER CONSUMPTION STORAGE UNIT
170
PERFORMANCE SCHEDULE STORAGE UNIT

# FIG.13

| DATE | TIME | SCHEDULE | USE OF LAPTOP PC |
|---|---|---|---|
| JULY 10 | 3 | | |
| | 6 | | |
| | 9 | MEETING (MEETING ROOM NO. 10) 10: 00 TO 11:00 | PRESENTATION |
| | 12 | | |
| | 15 | | |
| | 18 | BUSINESS TRIP | PLAY VIDEO |
| | 21 | | |
| | 24 | | |
| JULY 11 | 3 | | |
| | 6 | BUSINESS TRIP | WRITE DOCUMENT |
| | 9 | | |
| | 12 | | |
| | 15 | | |
| | 18 | | PRESENTATION |
| | 21 | | |
| | 24 | | |
| ⋮ | ⋮ | ⋮ | ⋮ |
| JULY 20 | 3 | | |
| | 6 | | |
| | 9 | | |
| | 12 | MEETING | BROWSE WEBSITE |
| | 15 | | |
| | 18 | | |
| | 21 | | |
| | 24 | | |

FIG.14


1400 LAPTOP COMPUTER
1410
MAIN SECTION
1411
CPU
1412
RAM
1413
ROM
1414
HDD
1415
CD-ROM/
DVD DRIVE
1416
FD DRIVE
1417
I/O
INTERFACE
1418
LAN
INTERFACE
1419
MODEM
1420
DISPLAY
DEVICE
1430
KEYBOARD
1440
MOUSE
1450
LAN
1451
PC
1452
SERVER
1453
PRINTER
1460
PUBLIC LINE